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Docket No.: 5000-0124PUS1
(PATENT)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:
Volker MAYWALD et al.

Application No.: 10/535,710

Confirmation No.: N/A

Filed: May 20, 2005

Art Unit: N/A

For: PREPARATION OF BENZOPHENONES

Examiner: Not Yet Assigned

LETTER

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Subsequent to the filing of the above-identified application on May 20, 2005, attached hereto is an English translation of the International Preliminary Examination Report (Form PCT/IPEA/409) that should be made of record in the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or to credit any overpayment to Deposit Account No. 02-2448 for any

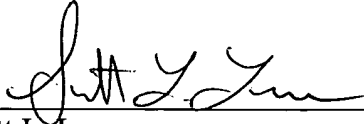
Application No.: 10/535,710

Docket No.: 5000-0124PUS1

additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17; particularly, extension of time fees.

Dated: September 7, 2005

Respectfully submitted,

By 

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Attachments

From the INTERNATIONAL BUREAU

us-31507

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NOTIFICATION OF TRANSMITTAL
OF COPIES OF TRANSLATION
OF THE INTERNATIONAL PRELIMINARY REPORT
ON PATENTABILITY
(CHAPTER I OR CHAPTER II
OF THE PATENT COOPERATION TREATY)
(PCT Rule 72.2)

To:

BASF AKTIENGESELLSCHAFT
67056 LUDWIGSHAFEN
ALLEMAGNE

Patente, Marken u. Lizenzen

27. Juli 2005

Date of mailing (day/month/year) 21 July 2005 (21.07.2005)		
Applicant's or agent's file reference 0000054139	IMPORTANT NOTIFICATION	
International application No. PCT/EP2003/013483 ✓	International filing date (day/month/year) 01 December 2003 (01.12.2003)	ASTIV
Applicant BASF AKTIENGESELLSCHAFT et al ✓		

1. Transmittal of the translation to the applicant.

The International Bureau transmits herewith a copy of the English translation made by the International Bureau of the international preliminary examination report established by the International Preliminary Examining Authority.

2. Transmittal of the copy of the translation to the elected Offices.

The International Bureau notifies the applicant that copies of that translation have been transmitted to the following elected Offices requiring such translation:

AZ, CA, CH, CN, GH, KG, KP, KR, MK, MZ, RU, TM

The following elected Offices, having waived the requirement for such a transmittal at this time, will receive copies of that translation from the International Bureau only upon their request:

AE, AG, AL, AM, AP, AT, AU, BA, BB, BG, BR, BY, BZ, CO, CR, CU, CZ, DE, DK, DM, DZ, EA, EC, EE, EG, EP, ES, FI, GB, GD, GE, GM, HR, HU, ID, IL, IN, IS, JP, KE, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MN, MW, MX, NI, NO, NZ, OA, OM, PG, PH, PL, PT, RO, SC, SD, SE, SG, SK, SL, SY, TJ, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW

3. Reminder regarding translation into (one of) the official language(s) of the elected Office(s).

The applicant is reminded that, where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary examination report.

It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned (Rule 74.1). See Volume II of the PCT Applicant's Guide for further details.

The International Bureau of WIPO
34, chemin des Colombettes
1211 Geneva 20, Switzerland

Authorized officer

Yolaine Cussac

Facsimile No.+41 22 740 14 35

Facsimile No.+41 22 338 70 80

Translation

PATENT COOPERATION TREATY

PCT/EP2003/013483



PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 0000054139	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/EP2003/013483	International filing date (day/month/year) 01 December 2003 (01.12.2003)	Priority date (day/month/year) 13 December 2002 (13.12.2002)
International Patent Classification (IPC) or national classification and IPC C07C 45/46, 45/81, 49/84, 51/60, 51/363		
Applicant BASF AKTIENGESELLSCHAFT		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 4 sheets, including this cover sheet.

☐ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of _____ sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demand 10 May 2004 (10.05.2004)	Date of completion of this report 08 October 2004 (08.10.2004)
Name and mailing address of the IPEA/EP	Authorized officer
Facsimile No.	Telephone No.

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/EP2003/013483

I. Basis of the report

1. With regard to the elements of the international application:*

- ☐ the international application as originally filed
- ☒ the description:
 pages _____ 1-8 _____, as originally filed
 pages _____, filed with the demand
 pages _____, filed with the letter of _____
- ☒ the claims:
 pages _____, as originally filed
 pages _____, as amended (together with any statement under Article 19
 pages _____, filed with the demand
 pages _____ 1-9 _____, filed with the letter of _____ 03 May 2004 (03.05.2004)
- ☐ the drawings:
 pages _____, as originally filed
 pages _____, filed with the demand
 pages _____, filed with the letter of _____
- ☐ the sequence listing part of the description:
 pages _____, as originally filed
 pages _____, filed with the demand
 pages _____, filed with the letter of _____

2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item. These elements were available or furnished to this Authority in the following language _____ which is:

- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of the translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages _____
- ☐ the claims, Nos. _____
- ☐ the drawings, sheets/fig _____

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).**

* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rule 70.16 and 70.17).

** Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/EP 03/13483

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	1-9	YES
	Claims		NO
Inventive step (IS)	Claims	1-9	YES
	Claims		NO
Industrial applicability (IA)	Claims	1-9	YES
	Claims		NO

2. Citations and explanations

The present invention relates to a further configuration of a process for preparing certain benzophenones (see formula I) by a synthesis principle which is known *per se*, i.e. by Friedel-Craft acylation of acid chloride (II) with 3,4,5-trimethoxytoluene; see EP-A-897 904 (D1) as the closest prior art.

The claimed configuration of the process consists essentially in the selection of a higher-boiling aromatic hydrocarbon, i.e. chlorobenzene, benzotrifluoride or nitrobenzene, as a solvent for said Friedel-Craft reaction, using a (not further specified) "iron catalyst". This special solvent selection is linked to some technical advantages, such as a faster reaction due to the possibility of using higher reaction temperatures or of eliminating HCl by inert gas stripping. Moreover, it permits the use of smaller ("catalytic") amounts of FC catalyst; see the description, page 2, line 36 - page 3, line 16; and page 4, last paragraph.

D1 recommends ethylene or methylene chloride, benzene, octane, decane or their mixtures as solvents (D1, page 7, lines 30-32). In the relevant examples in the citation, methylene chloride and equimolar amounts of aluminium

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.
PCT/EP 03/13483

chloride are used. The use of the claimed selected solvents is thus not disclosed in this manner by D1, nor does D1 give a person skilled in the art any reason to select them.

D2 describes the preparation of benzophenone by Friedel-Craft acylation with an iron catalyst that consists of iron(III) chloride with considerable amounts of graphite as another necessary component, this feature being necessary for the invention. Although halogenated benzenes and nitrobenzene are also mentioned in general as possible reaction solvents, the halogenated aliphatic hydrocarbons are mentioned as being especially preferred (cf. page 4, line 45 - page 5, line 7). In the examples of the citation, EDC or TCE is used without exception. D2 would thus also fail to prompt a person skilled in the art to design the claimed process as defined in the claims.

In view of the previously published available prior art (D1 and D2), the subject matter claimed in the present application appears to meet the requirements of PCT Article 33(2)-33(4).